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ABSTRACT

Two pilot efforts were undertaken to teach moderately and severely handicapped children music. In the first, moderately and severely handicapped children were found capable of making gains in rhythm, melody, and keyboard after 3 months of weekly half hour group music instruction sessions and three weekly half hour practice sessions. Ss did not make gains in ensemble and harmony, as a nonhandicapped control group did. In the next study, 18 severely handicapped children were taught music skills in a framework that allowed for continuous assessment and measured generalization by asking parents about musical skills demonstrated at home. Twelve of the 14 children with generalization data reported showed increases in swaying, clapping, keeping time, or dancing to music played in the home. Others increased time spent humming and singing and trying to play musical instruments. (CL)

Teaching Research Infant and Child Center

PREPARED BY THE STAFF OF THE SPECIAL EDUCATION DEPARTMENT

Teaching Research, Monmouth, Oregon 97361 **Vol. XI, No. 1, September 1982**

This is the nineteenth of a series of newsletter editions which describe the activities of the Teaching Research Infant and Child Center. The Teaching Research Infant and Child Center consists of:

- Parent Training Clinic: Bill Moore
- Prescriptive Program: Gail Rogers
- Group Home for Severely Handicapped: Dave Templeman
- Director of Classroom Services: Jane Toews
- Integrated Preschool Program: Sue Smiley and Kim Udell
- Elementary Classroom for Severely Handicapped, located in Monmouth-Independence School District: Sue Garner and Barbara Korbe
- Secondary Classroom for Severely Handicapped, located in Monmouth-Independence School District: Nancy Trecker, Sheilah Muthersbaugh, Kirk Hendrickson
- Secondary Classroom for Mildly Mentally Retarded/Severely Emotionally Disturbed, located in Salem School District: Chris Hadden, Vicki Nishioka-Evans
- Group Home for Mildly Mentally Retarded/Severely Emotionally Disturbed: Debbie Kraus
- Training Staff: Torry Piazza Templeman, Carol Bunse, Tina Wilson, Joyce Petersen, Valerie Miller, Bruce Dalke.

This issue of the newsletter describes the results of the Teaching Research Music Program for moderately and severely handicapped children. This issue was prepared by Tina Wilson and Bud Fredericks. All inquiries regarding the music program should be addressed to Tina Wilson at Teaching Research.

Background of the Music Program

Music for the handicapped has long been thought to have therapeutic value, so much so, that the music therapy discipline has emerged. Consequently, many have demonstrated the value of music in various types of therapeutic endeavors. A number of people have used music contingently to remediate or modify inappropriate behaviors and to build appropriate behaviors. For instance, Deutsch & Parks (1978) used contingent music as a reinforcement to decrease the frequency of inappropriate conversational speech while simultaneously reinforcing and increasing more appropriate conversational dialogue. Carroccio, Latham, & Carroccio (1976) report on a music therapy staff of a large state mental hospital who used contingent guitar rental plus feedback to decelerate head and face touching of a 40-year-old male schizophrenic. After two and one half years the rate of head and face touching was well below baseline. Johnson, Catherman and Spiro (1981) describe a procedure whereby music was used contingently to improve posture in a cerebral palsied child.

In addition to many other instances of similar remediation of inappropriate behaviors, the music therapy professionals have also used music to facilitate perceptual motor activities. Two such articles summarize those skills. Practical Pointers (1977) show how rhythmic activities help children express feelings, communicate and improve perceptual motor skills. The article maintains such music activities increase the sensorial awareness of handicapped children and give specific benefits that may accrue to various types of handicapped conditions. Lapp (1978), citing various aspects of perceptual motor

development, lists a variety of music activities which can aid in this development.

Music has also been investigated as to its effects as background to learning activities. Stainback, Stainback, Hallahan, & Payne (1974) investigated the effects of background music as a calming influence in the presence and absence of distractors on task relevant and task irrelevant learning. This study was conducted with primary and intermediate level institutionalized educable mentally retarded subjects. The result indicated that music tended to aid the institutionalized EMR subjects in attending to relevant stimuli. It did not appear to influence attending to irrelevant stimuli either positively or negatively. It was concluded that music enabled institutionalized EMR subjects to process more information, as relevant learning was increased without reducing irrelevant learning. Richman (1976) tested aspects of specific tempo background music on the habilitation of severely retarded persons. Thirty institutionalized retarded males were tested on a repetitive manual performance task judged to be similar to the types of tasks found in sheltered workshops. Each subject received each of the background treatments noncontingently: no music, slow tempo music, regular tempo music, fast tempo music. The result indicated that the regular tempo of background music facilitated the greatest improvement in performance, suggesting that the effect of music on performance is more complex than the issue of contingent presentation. Spudic & Somervill (1978) conducted a study which was designed to assess the effects of music on activity and academic performance among retarded children. Thirty-six children were divided into low, medium and high distractable groups on the basis of teacher ratings. The subjects performed arithmetic problems under each of three conditions: calming music, exciting music, and no music. There were no significant differences in math performance which could be attributed to the different conditions of music. The only significant finding was that the low distractable group performed significantly better than medium and high distractable groups. Vernetti & Jacobs (1972) used classical music to mask background noises in classes of children with learning disabilities. Fifty-two children in these classes were given mathematics worksheets to complete while conditions of music and noise were alternated. The children served as their own controls. No significant difference was found between the conditions, nor was there any noticeable interaction between the variables tested.

Therefore, we see that music is being used in a variety of circumstances. It has been used to teach perceptual motor skills effectively although when used as background music, the effects seemed to be mixed. It has been amply demonstrated in many studies that it can be used contingently to alleviate inappropriate behaviors.

But what about teaching the moderately and severely handicapped child music skills as a leisure time activity? Mills (1975) maintained that a band could be established for the trainable child but that certain requirements were necessary: that the trainable students could physically be able to play the instruments and that there would be a qualified teacher and full support of the administration and staff. Mills reported no results in doing this type of training. Aldridge (1979) attempted to determine preference for rhythm instruments and to investigate the use of a rhythm band score and to teach basic rhythm concepts to EMR adult females. Results indicated significant differences between pretest and posttest scores and it was noted that 90% of the subjects were able to read a rhythm band score equally well backward as they could forward. This study suggested that the rhythm band score was an effective tool for the teaching of rhythm concepts and rhythm performance to a trainable population. However, nowhere in the literature could be found evidence that music curricula had been designed specifically to teach music skills to moderately and severely handicapped. There is also no evidenca that students learned music skills in a structured environment, that the skills would generalize and music would become part of the student's leisure time activities.

Music Research Conducted by Teaching Research Staff

In an effort to determine whether it was possible to teach moderately and severely handicapped children music, two pilot efforts were conducted. The first of these was conducted in conjunction with a music consultant with a Teaching Research staff member's mentally retarded son. A two year effort was undertaken during the period 1975-1977 wherein this moderately retarded (IQ 48) boy, age 10, was taught the Yamaha Music Program within group instruction provided by the music instructor. At the conclusion of this two year period, the boy's vocal pitch and ability to approximate vocally correct musical tones had improved so that he could participate in chorus groups in a regular education program. He also made progress in learning to play the organ and was able to pick out simple tunes with the right and left hand played separately. The child also demonstrated an increased interest in listening to records, the acquisition of records, and playing independently and without prompting, the organ in the family home.

As a result of this single subject study, the Teaching Research Infant and Child Center examined during the 1977-78 school year whether other moderately and severely handicapped children could be taught music skills.

This examination was conducted as part of the regular instructional program provided the children. A curriculum had been developed which was the basis for this program.

Two populations were chosen for study, a moderately and severely handicapped population containing a variety of etiologies, including mental retardation, deaf-blind, deaf-retarded, emotionally disturbed and autism, and a comparison population of non-handicapped children ages 4-6. This non-handicapped population was chosen as being representative of the mental age of the handicapped population. In most cases, however, the handicapped population's mental age was below this level.

Children in groups of 6 to 8 were instructed in a group setting once a week for ½ hour by a music consultant. Further practice in the skills taught was provided during three additional ½ hour periods during the week.

Table 1 summarizes gains made by these two populations. Table 1 shows the skills possessed by the handicapped in five music curricular areas on October 27. Instruction was conducted with the handicapped population from October 27 to February 2. Measurements

	HANDICAPPED POPULATION						COMPARISON POPULATION		
Area	n	Oct. 27 Baseline	Dec. 5	Feb. 2	Dec. 5-Feb. 2 Gains Total Gain	X Gain	n	Dec. 5-Feb. 2 Gains Total Gain	X Gain
Rhythm	23	33	140	340	200	8.69	23	395	17.17
Melody	23	23	123	231	108	4.69	23	464	20.17
Keyboard	18	5	8	96	88	4.88	23	44	1.91
Ensemble	2	6	6	6	--	----	23	75	3.26
Harmony	--	--	---	---	---	----	23	22	.95

Table 1. Gains made by handicapped population and comparison group

were taken on December 5 and February 2. The number of skills possessed by the non-handicapped on those dates is also shown. The gains made by the handicapped during the period December 5 to February 2 were compared with the gains made by the non-handicapped population during the same period. As is obvious from an examination of Table 1, the handicapped population were capable of making gains in rhythm, melody and keyboard during the December 5 through February 2 period.

The gains made by the comparison population were much higher in rhythm and melody and surprisingly less in keyboard. The comparison population also made gains in ensemble and harmony, whereas the handicapped population did not show gains in these areas. Although the handicapped population did not achieve the same magnitude of results as the comparison population, there seemed to be sufficient evidence to indicate that the handicapped population could learn many of these skills.

A third study was then conducted during the 1980-81 school year under the auspices of a federal grant (Project #G008002236, Office of Special Education). The project director of this project was Ms. Jackie Walker. The population of this study were members of three classrooms for the severely handicapped conducted by Teaching Research - preschool, elementary and secondary. Eighteen children completed participation in the study. The music instruction which was presented to the children was that which would be normally presented in the course of instruction in each of these classrooms and followed this curriculum.

Two systems of measurement were used. The first measured the skill acquisition of the children under instruction. The second measured the generalization of those skills in the child's home environment. In addition to these measurements undertaken for the purpose of research, data were gathered continuously by the classroom teacher and the music conaultant. The major purpose of this continuous data was to make modifications in the child's instructional program to facilitate progress. A description of the types of decision making that was done with these continuous data is described in A Data Based Classroom for Moderately and Severely Handicapped.

To determine if the child was using these taught music skills in his home setting, questionnaires were administered on an interview basis to determine whether children were using music skills in the home. The questionnaires were administered in October, December, February and May of the project year.

A test of general skill acquisition of music scores was accomplished for all students across all areas. The individual scores for each student are shown in Table 2. October scores are shown as score 1 and the April scores are shown as score 2. The two scores were statistically compared using a t-test and are found to be significant at the .04 level.

Student	Score #1 (October)	Score #2 (April)
	Preschool	
1	109	143
2	111	164
3	324	590
4	41	80
5	151	241
6	131	354
7	156	372
8	346	744
9	306	781
	Elementary	
10	689	935
11	83	113
12	64	106
	Secondary	
13	605	737
14	498	1,402
15	398	686
16	495	779
17	32	39
18	44	56

N=18

Table 2. October and April scores for all students across all skills

Of the 18 children who were involved in the study, generalization data were obtained for 14. These data were obtained from the parents or group home parents.

Of the 14 children two showed no generalization data. All the remaining 12 showed no generalization data being exhibited until the final testing period in April. The amount of generalization varied considerably with each child. The generalization was measured by each child's independent responses to music or musical instruments in the home setting. All 12

children showed increases in swaying, clapping, keeping time, or dancing to music as it was played in the home, thus exhibiting more attention to music. One child increased the amount of humming and singing, accompanying heard music. Seven of the children increased the amount of time they attempted to play musical instruments in the home. One child was writing musical notes and one spent time looking at music sheets.

Conclusions

We believe that as a result of these studies, it has been demonstrated that the Teaching Research music program and curriculum has been effectively used to teach moderately and severely handicapped children of all etiologies. As is evidenced by Table 2, the degree of learning varies considerably with each child. This is comparable to results which would be achieved with any curriculum for a population that varied so in severity and type of handicapping condition. For instance, there were two deaf-blind children in the group and they had difficulty proceeding beyond the rhythm section of instruction, but interestingly enough instruction did achieve some degree of generalization in both cases.

The data presented from the latter study were gathered during a period of only one academic year. These children have been continued in music instruction and are demonstrating continued gains in various music skills.

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MATERIALS CATALOG

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RECOMMENDED READING

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